California Sportfishing Protection Alliance

"An Advocate for Fisheries, Habitat and Water Quality"

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Ms. Nichole Morgan, Supervising WRCE
Mr. Jim Marshall, Sr. WRCE
Ms. Xuan Luo, WRCE
Regional Water Quality Control Board
Central Valley Region
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VIA: Electronic Submission
Hardcopy if Requested

RE: Renewal of Waste Discharge Requirements (NPDES No. CA0077682) for Sacramento Regional County Sanitation District Sacramento Regional Wastewater Treatment Facility

Dear Messrs. Laputz, Marshall and Mesdames Morgan and Luo;

The California Sportfishing Protection Alliance (CSPA) has reviewed the proposed Waste Discharge Requirements (NPDES No. CA0077682) for the Sacramento Regional Wastewater Treatment Facility and respectfully submits the following comments.

CSPA requests status as a designated party for this proceeding. CSPA is a 501(c)(3) public benefit conservation and research organization established in 1983 for the purpose of conserving, restoring, and enhancing the state's water quality and fishery resources and their aquatic ecosystems and associated riparian habitats. CSPA has actively promoted the protection of water quality and fisheries throughout California before state and federal agencies, the State Legislature and Congress and regularly participates in administrative and judicial proceedings on behalf of its members to protect, enhance, and restore California's degraded water quality and fisheries. CSPA members reside, boat, fish and recreate in and along waterways throughout the Central Valley, including Sacramento County.

History and status:
On 9 December 2010, the Central Valley Water Board adopted Waste Discharge Requirements Order R5-2010-0114, prescribing waste discharge requirements for the Sacramento Regional Wastewater Treatment Plant. Order R5-2010-0114 has been amended by the Central Valley Water Board on several occasions. The existing sewage treatment plant provides a secondary level of treatment using pure oxygen biological activated sludge and has a designed capacity of 181 mgd. The permit requires a facility modification will that will provide tertiary filtration and include replacement of the existing pure oxygen biological treatment facilities with biological nutrient removal (BNR) air activated treatment facilities capable of removing ammonia and

nitrate nitrogen, addition of tertiary treatment in the form of filtration with granular media filters, and an increase in storage facilities. The final effluent limitations and requirements to provide a tertiary level of treatment become effective 9 May 2023 (7 years), and final effluent limitations for total ammonia nitrogen become effective 11 May 2021 (5 years).

The Fact Sheet of Order No. R5-2010-0114 concluded that:

- Without tertiary treatment, the downstream waters could not be safely utilized for contact recreation or the irrigation of food crops.

- The Sacramento River near the diffuser is a popular sport fishing area. In addition, there are at least 20 agricultural diversions within 1 mile upstream and 2 miles downstream of the discharge[2]. Based upon information submitted by Sacramento Regional County Sanitation District (SRCSD), the typical construction of the agricultural irrigation water intakes in the vicinity of the outfall would draw water from near the bank of the river, below the water surface (deep enough to not go dry during low river levels, but far enough from the river bottom to not be impacted by bottom sediments). It appears that undiluted effluent will not be drawn into the agricultural intakes, but varying mixtures of effluent and river water will be diverted from the partially mixed discharge plume.

  Tetra Tech was tasked to review the Sacramento Regional County Sanitation District's dynamic modeling study for the Sacramento Regional Wastewater Treatment Plant. Tetra Tech submitted a final review memorandum to the Regional Board dated 30 June 2008. "Some phenomena were observed in the field that were not reproduced in the model, most notably a region of high dye concentration near the eastern river bank just downstream form the diffuser in the October 2005 dye release. The subsequent November 2006 dye release was conducted in an effort to further resolve this observed behavior, however the model failed in all cases to reproduce this high concentration region." (pages 9 and 10) It was not discussed that the area close to the river banks are defined as providing a bypass for fish – obviously, the dye shows the effluent plume at the bank. This is simply discussed as an anomaly; fish bypass was not addressed. This would confirm that there is no area of bypass for fish. To address the "failed" dye test the Discharger conducted a single additional dye test, following repair of plugged portals in the discharge diffuser. This single test is not sufficient to nullify the results of the dye test, which showed the wastewater discharge hugging the bank of the river (the supposed zone of passage for fish).

- The Beach Standard of 8 illnesses for 1000 exposures is not a policy of USEPA nor does it state that this is an acceptable rate of illness. It is instead a recognition that there is a health risk associated with recreational use of freshwaters, even when those waters in and of themselves are considered to be free of health risk. Wildlife, non-point source discharges, and the recreationists themselves, all contribute pathogens to the freshwaters used for recreation. If a controllable sewage treatment plant discharge is allowed to add pathogens to a receiving water such that the health risk is at the USEPA Beach Standard, the uncontrollable sources and contribution of pathogens from wildlife, non-point source pollution, and the recreationalists, will cause the overall health risk to exceed the 8 illnesses per 1000 exposures. If the Beach Standard is applied to the

SRCSD discharge, under the most critical river conditions, the SRCSD discharge would cause nearly 1 of every 100 people ingesting river water during recreation to become ill from pathogens in the SRCSD discharge, which is in addition to any contribution of health risk from other sources.

- Given the very high level of public contact with the receiving water, the use of the receiving water for irrigation which can result in human contact with pathogens, and extensive use of Delta waters as private and public water supplies, increased risk of illness and infection from exposure to the wastewater must be prevented to protect the municipal, agricultural or recreational beneficial use. This permit requires an essentially pathogen-free wastewater, which will incidentally implement DPH's recommendation to improve the level of disinfection to remove protozoa in addition to bacteria, enteric virus and other pathogens. Several technologies are available to remove pathogens, all essentially involving filtration to produce a very low-solids effluent, which is then dosed with a disinfectant (usually chlorine or UV light). The combination of filtration and disinfectant effectively removes all pathogens. Requirements of Title 22 will be adequate to meet the 1 in 10,000 risk recommended by the DPH.

- Drinking Water (MUN) beneficial use. The Sacramento River and Delta downstream of the SRCSD discharge are used extensively for municipal and domestic drinking water supply. The raw water supply for these drinking water systems contains increased concentrations of pathogens as the result of SRCSD's existing discharge, although the health risk caused by the increased pathogen concentrations has not been studied. Municipal drinking water intakes that provide full drinking water treatment required by State and Federal regulations should be able to remove the increased pathogens without a health risk to the consumers. However, there are small drinking water systems throughout the Delta that are not legally required to meet these State and Federal regulations, and so may not have treatment systems that can dependably remove the pathogens. Additionally, there can be incidental drinking of raw Delta water by the public.

Ammonia at concentrations above criteria is toxic to aquatic life. The least stringent Effluent Limitations for ammonia to prevent aquatic life toxicity in the proposed Permit are 2.4 mg/l as a monthly average and 3.0 mg/l as a daily maximum. Table F-2 of the proposed Permit shows the current wastewater treatment facility discharges up to 43 mg/l as a daily maximum and 38 mg/l as a monthly average.

Compliance assessment:

Page F-10 of the proposed Permit contains a "Compliance Summary". The compliance summary in total details an Administrative Civil Liability (ACL) Complaint No. R5-2013-0502 on 11 January 2013 which proposed to assess a civil liability of $21,000 against the Discharger for effluent violations of settleable matter, chlorine residual, manganese, dichlorobromomethane, bis (2-ethylhexyl) phthalate, and copper and an ACL Complaint No. R5-2014-0554 on 8 September 2014, which proposed to assess a civil liability of $6,000 against the Discharger for effluent violations of temperature and ammonia. There is no further discussion or assessment of

violations, negative impacts to water quality, or the beneficial uses of the Sacramento River or the Sacramento River Delta. The proposed Permit does not present a "Compliance Summary" but a short list of mandatory enforcement actions.

Ammonia and nitrogen: In the past, the Discharger was allowed to remove ammonia from samples prior to conducting aquatic toxicity testing. Clearly ammonia concentrations of up to 43 mg/l would cause both acute and chronic toxicity to aquatic organisms when the Aquatic life criteria is 3.0 mg/l as a daily maximum. The proposed Permit fails to discuss compliance with toxicity tests due to ammonia and the impacts to surface waters and associated beneficial uses during the next 5 years until compliance with the final Effluent Limitation is required.

The Sacramento-San Joaquin Delta is 303-d listed for unknown toxicity. Ammonia is one of the most common toxicants from domestic sewage. The subject Permit regulates the discharge of municipal wastewater into a relatively narrow reach of the Sacramento River that is within the tidal prism and habitat of, and a migration corridor for, numerous pelagic and anadromous fish species. Numerous species listed or proposed to be listed pursuant to state and federal Endangered Species Acts, including Delta smelt (*Hypomesus transpacificus)*, are found in this reach of the river for all or a critical part of their life cycle. The precipitous collapse of the Central Valley's pelagic and anadromous fish populations has been documented at considerable length. Since 1967, the California Department of Fish and Wildlife's ("DFW") Fall Midwater Trawl indices for striped bass, Delta smelt, longfin smelt, American shad, splittail and threadfin shad have declined by 99.7, 97.8, 99.9, 91.9, 98.5 and 97.8 percent, respectively. The Delta also supports numerous threatened or endangered aquatic species, specifically green sturgeon (*Acipenser medirostris*), federal threatened, candidate for federal endangered; Delta smelt (*Hypomesus transpacificus*), state endangered, federal threatened, Longfin smelt (*Spirinchus thaleichthys*), state threatened, candidate for federal threatened; Central Valley steelhead (*Oncorhynchus mykiss*), federal threatened; Sacramento winter-run Chinook salmon (*Oncorhynchus tshawytscha*), state endangered, federal endangered; Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*), state threatened, federal threatened; Central Valley fall/late-fall-run Chinook salmon (*Oncorhynchus tshawytscha*), federal species of concern, state species of special concern; Sacramento splittail (*Pogonichthys macrolepedotus*), state species of special concern; Pacific lamprey (*Entosphenus tridentate*), federal species of concern and river lamprey (*Lampetra ayresi*), state species of special concern.

The proposed Permit contains Receiving Water Limitations prohibiting toxicity and the discharge of biostimulatory substances, which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses. Ammonia nitrogen conversion to other forms of nitrogen can cause and contribute to biostimulation and unacceptable aquatic growths, which are documented with the Delta ecosystem.

It is reasonable that the proposed Permit should discuss the impacts of discharging ammonia above toxic and biostimulatory levels beyond the five-year life of the permit. The proposed Permit's "Compliance Summary" is silent on the matter of ammonia with the exception of the issuance of a mandatory minimum penalty.

Pathogens and Tertiary Filtration Treatment: As is cited above, without tertiary treatment, the downstream waters could not be safely utilized for contact recreation or the irrigation of food crops. Past Permits document that the Sacramento River near the diffuser is a popular sport fishing area; there are at least 20 agricultural diversions within 1 mile upstream and 2 miles downstream of the discharge where a mix of effluent and river water will be diverted; The Department of Public Health experts testified that a given number of people ingesting river water during recreation will become ill from pathogens in the SRCSD discharge. Tertiary treatment will not be provided until after expiration of the five-year life of the proposed Permit.

It is reasonable that the proposed Permit should discuss the current illness rate from those using the Sacramento River in the vicinity of the sewage discharge, which will last throughout the 5-year life of the Permit. The proposed Permit and past permits for this facility discuss treatment equivalent to CCR Title reclaimed water to protect contact recreational and irrigated agriculture beneficial uses. The proposed Permit fails to assess what irrigated agricultural uses are associated with the documented 20 agricultural diversions that exist within the mixing zone for the sewage discharge. Are food crops or crops designated as "organic" grown and currently being irrigated with water which would not meet the standards of CCR Title 22? Has there been any assessment of the impacts to food crop irrigation, associated illness rates or the irrigated agriculture beneficial use of the Sacramento River? Even a tertiary filtered level of treatment, without additional dilution, is not protective of the drinking water beneficial use. There is no assessment or discussion of small drinking water systems throughout the Delta that are not legally required to meet the State and Federal drinking water treatment regulations and the possible impacts from treated sewage discharges that are unfit for domestic uses.

Our specific comments are as follows:

1. **The proposed Permit allows for a Thermal Plan Exception that does not comply with the applicable federal regulations and an Order from the Sacramento Superior Court.**

The proposed Permit contains the following Effluent and Receiving Water Limitations, respectively:

e. **Temperature.**
i. **Effective immediately,** the maximum temperature of the discharge shall not exceed the natural receiving water temperature at Monitoring Location RSWU-001 by more than 20°F.
ii. **If the Central Valley Water Board receives concurrence from the State Water Board regarding the Thermal Plan exceptions2, the following effluent limitation applies in lieu of the effluent limitation in section**
IV.A.1.e.i, the maximum temperature of the discharge shall not exceed the natural receiving water temperature at Monitoring Location RSWU-001 by more than 20°F from 1 May through 30 September and more than 25°F from 1 October through 30 April.

15. **Temperature:**
a. **Effective immediately,**
i. The discharge shall not create a zone, defined by a water temperature of 1°F or more above natural receiving water temperature which exceeds 25 percent of the cross sectional area of the river.
b. **If the Central Valley Water Board receives concurrence from the State Water Board regarding the Thermal Plan exceptions1, the following limitations will apply in lieu of the limitations in section V.A.15.a,**
i. If the natural receiving water temperature is less than 65°F, the discharge shall not create a zone, defined by water temperature of more than 2°F above natural temperature, which exceeds 25 percent of the cross sectional area of the river at any point outside the zone of initial dilution.
ii. If the natural receiving water temperature is 65°F or greater, the discharge shall not create a zone, defined by a water temperature of 1°F or more above natural receiving water temperature which exceeds 25 percent of the cross sectional area of the river at any point outside the zone of initial dilution for more than 1 hour per day as an average in any month.
c. **Effective immediately,** the discharge shall not cause the receiving water surface temperature to increase more than 4°F above the ambient temperature of the receiving water at any time or place.

Thermal Plan exceptions are regulated by 40 CFR 125.73(a), which provides that, "*Thermal discharge effluent limitations or standards established in permits may be less stringent than those required by applicable standards and limitations if the discharger demonstrates to the satisfaction of the director that such effluent limitations are more stringent than necessary to assure the protection and propagation of a balanced, indigenous community of shellfish, fish and wildlife in and on the body of water into which the discharge is made. This demonstration must show that the alternative effluent limitation desired by the discharger, considering the cumulative impact of its thermal discharge together with all other significant impacts on the species affected, will assure the protection and propagation of a balanced indigenous community of shellfish, fish and wildlife in and on the body of water into which the discharge is to be made.*" (Emphasis added)

The General Water Quality Provisions of the State's Thermal Plan require that the State Water Board concur with any exceptions *prior to their effective date*. Obviously, the State Water Board has not concurred with the exception.

As cited above, the proposed Permit Effluent Limitations already allow the wastewater discharge to be 20 to 25 degrees above the ambient receiving water temperature. But the Wastewater Discharger wants more. All the while aquatic life in the Sacramento River and the Sacramento River Delta suffer. As is cited above: "*Numerous species listed or proposed to be listed pursuant to state and federal Endangered Species Acts, including Delta smelt (Hypomesus transpacificus), are found in this reach of the river for all or a critical part of their life cycle. The precipitous collapse of the Central Valley's pelagic and anadromous fish populations has been documented at considerable length. Since 1967, the California Department of Fish and Wildlife's ("DFW") Fall Midwater Trawl indices for striped bass, Delta smelt, longfin smelt, American shad, splittail and threadfin shad have declined by 99.7, 97.8, 99.9, 91.9, 98.5 and 97.8 percent, respectively. The Delta also supports numerous threatened or endangered aquatic*

species, specifically green sturgeon (Acipenser medirostris), federal threatened, candidate for federal endangered; Delta smelt (Hypomesus transpacificus), state endangered, federal threatened, Longfin smelt (Spirinchus thaleichthys), state threatened, candidate for federal threatened; Central Valley steelhead (Oncorhynchus mykiss), federal threatened; Sacramento winter-run Chinook salmon (Oncorhynchus tshawytscha), state endangered, federal endangered; Central Valley spring-run Chinook salmon (Oncorhynchus tshawytscha), state threatened, federal threatened; Central Valley fall/late-fall-run Chinook salmon (Oncorhynchus tshawytscha), federal species of concern, state species of special concern; Sacramento splittail (Pogonichthys macrolepedotus), state species of special concern; Pacific lamprey (Entosphenus tridentate), federal species of concern and river lamprey (Lampetra ayresi), state species of special concern." Clearly the alternative effluent limitation desired by the discharger, considering the cumulative impact of its thermal discharge together with all other significant impacts on the species affected, will NOT assure the protection and propagation of a balanced indigenous community of shellfish, fish and wildlife in and on the Sacramento River.

"Everything right now is putting extreme pressure on those populations," says Stafford Lehr, chief of fisheries for the California Department of Fish and Wildlife. Lehr says the drought killed off nearly every single endangered winter-run Chinook salmon in the state last year. The San Joaquin and Sacramento rivers where they spawn are shallower. They're warmer. They're too warm for the fish to thrive. "Conditions were even worse this year," Lehr says. (Here and Now – NPR, Wednesday, May 27, 2015)

Following the 2010 permit renewal, CSPA filed a lawsuit with the Sacramento Superior Court. One of the issues raised by CSPA was related to the allowance of Thermal Plan exceptions in the 2010 Permit. In October 2015, the Court ruled that the 2010 Permit failed to include the proper findings for a Thermal Plan exception and ordered the Central Valley Water Board to vacate the Thermal Plan exceptions and reconsider the issue of whether Thermal Plan exceptions may be granted.

In the most recent ruling, the Court held that "additional research was needed concerning the delta smelt." This was not done. Instead, the previously rejected studies and agency communications were re-hashed, re-explained and re-argued in a new report (the "2015 Supplemental Report"). However, nothing in the Regional Board's return to writ, the Draft Tentative Permit or the 2015 Supplemental Report on which the Draft Tentative Permit relies, supports a finding that the exceptions to the Thermal Plan are "more stringent than necessary to assure the protection and propagation of a balanced, indigenous community of shellfish, fish and wildlife in and on the body of water into which the discharge is made," as required. Therefore, the Regional Board, in issuing the proposed Permit with inadequate findings, continues to violate the terms of the October 29, 2014 writ, the Court's March 26, 2015 Order requiring "immediate compliance," and the Court's October 19, 2015 ruling that the Regional Board had failed to satisfy the requirements of 40 C.F.R. § 125.73(a) with respect to the exception to the Thermal Plan as it relates to Delta smelt.

The Court has rejected all of the temperature studies previously offered by the Regional Board in support of its finding that an exception to the Thermal Plan is warranted, with respect to the Delta smelt. The Court has already pointed out, these studies do not "focus on the protection and propagation of a balanced indigenous community of shellfish, fish and wildlife" because a showing

that "the exception won't kill or harm more Delta Smelt than are already being killed" did not "equate to a finding that the subject smelt are more than adequately protected and propagated."

2. **The proposed Permit cites exemption from CCR Title 27 for land disposal/storage facilities despite that the mandated preconditions have not been met.**

CCR Title 27

§20090. SWRCB - Exemptions. (C15: §2511): The following activities shall be exempt from the SWRCB-promulgated provisions of this subdivision, so long as the activity meets, and continues to meet, all preconditions listed: (a) **Sewage—**Discharges of domestic sewage or treated effluent which are regulated by WDRs issued pursuant to Chapter 9, Division 3, Title 23 of this code, or for which WDRs have been waived, and which are consistent with applicable water quality objectives, and treatment or storage facilities associated with municipal wastewater treatment plants, provided that residual sludges or solid waste from wastewater treatment facilities shall be discharged only in accordance with the applicable SWRCB-promulgated provisions of this division. (b) **Wastewater—**Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met: (1) the applicable RWQCB has issued WDRs, reclamation requirements, or waived such issuance; (2) the discharge is in compliance with the applicable water quality control plan; and (3) the wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste.

Region 5's Basin Plan

WATER QUALITY OBJECTIVES FOR GROUND WATERS

The following objectives apply to all ground waters of the Sacramento and San Joaquin River Basins, as the objectives are relevant to the protection of designated beneficial uses. These objectives do not require improvement over naturally occurring background concentrations. The ground water objectives contained in this plan are not required by the federal Clean Water Act.

Bacteria

In ground waters used for domestic or municipal supply (MUN) the most probable number of coliform organisms over any seven-day period shall be less than 2.2/100 ml.

Chemical Constituents

Ground waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At a minimum, ground waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in the following provisions of Title 22 of the California Code of Regulations, which are incorporated by reference into this plan: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Tables 64449-A (Secondary Maximum Contaminant Levels- Consumer Acceptance Limits) and 64449-B (Secondary Maximum Contaminant Levels-Ranges) of Section 64449. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect. At a minimum, water designated for use as domestic or municipal supply (MUN) shall not contain lead in excess of

0.015 mg/l. To protect all beneficial uses, the Regional Water Board may apply limits more stringent than MCLs.

Tastes and Odors
Ground waters shall not contain taste- or odor producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

Toxicity
Ground waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial use(s). This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances.

The proposed Permit, page F-7, states that: "*As part of WDR Order R5-2003-0076, a CAP was initiated by the Discharger. The CAP is to address elevated constituent concentrations that were observed in samples from groundwater monitoring wells down gradient of the Dedicated Land Disposal areas (DLD's) and the Class III landfill when compared to upgradient groundwater monitoring wells*."

The land disposal areas have degraded groundwater quality contrary to the requirements of the Basin Plan. Therefore, the preconditions for exemption from CCR Title 27 have not been met and the land disposal areas cannot be exempted from regulatory requirements.

3. **The proposed Permit contains an Effluent Limitation for pH that does not comply with the Basin Plan.**

The proposed Permit, Section IV.A. Effluent Limitations contain an Effluent Limitation for pH, as an Instantaneous Minimum of 6.0 pH units. The water quality objective for pH in the Basin Plan is for an Instantaneous Minimum of 6.5 (Basin Plan, Water Quality Objectives). The Permit may not contain an Effluent Limitation below the Instantaneous Minimum Basin Plan Water Quality Objective. The proposed Permit, Fact Sheet F-83, contains the Reasonable Potential Analysis for pH yet provides no explanation or justification for a pH limitation less stringent than that provided by the Basin Plan.

The Fact Sheet contains a single word reference to a chronic mixing zone, however since pH is not a conservative parameter it is doubtful that a mixing zone analysis has been conducted for pH.

4. **The proposed Permit contains an allowance for a mixing zone that does not comply with the requirements of Federal Regulation 40 CFR Section 131.12 (a)(1) and the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP) or the Basin Plan.**

"A mixing zone is an area where an effluent discharge undergoes initial dilution and is extended to cover the secondary mixing in the ambient waterbody. A mixing zone is an allocated impact

zone where water quality criteria can be exceeded as long as acutely toxic conditions are prevented" according to EPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD) (USEPA, 1991), (Water quality criteria must be met at the edge of a mixing zone.). Mixing zones are regions within public waters adjacent to point source discharges where pollutants are diluted and dispersed at concentrations that routinely exceed human health and aquatic life water quality standards (the maximum levels of pollutants that can be tolerated without endangering people, aquatic life, and wildlife.) Mixing zone policies allow a discharger's point of compliance with state and federal water quality standards to be moved from the "end of the pipe" to the outer boundaries of a dilution zone.

The CWA was adopted to minimize and eventually eliminate the release of pollutants into public waters because fish were dying and people were getting sick. The CWA requires water quality standards (WQS) be met in all waters to prohibit concentrations of pollutants at levels assumed to cause harm. Since WQS criteria are routinely exceeded in mixing zones it is likely that in some locations harm is occurring. The general public is rarely aware that local waters are being degraded within these mixing zones, the location of mixing zones within a waterbody, the nature and quantities of pollutants being diluted, the effects the pollutants might be having on human health or aquatic life, or the uses that may be harmed or eliminated by the discharge. Standing waist deep at a favorite fishing hole, a fisherman has no idea that he is in the middle of a mixing zone for a sewage discharger that has not been required to adequately treat their waste.

In 1972, backed by overwhelming public support, Congress overrode President Nixon's veto and passed the Clean Water Act. Under the CWA, states are required to classify surface waters by *uses* – the beneficial purposes provided by the waterbody. For example, a waterbody may be designated as a drinking water source, or for supporting the growth and propagation of aquatic life, or for allowing contact recreation, or as a water source for industrial activities, or all of the above. States must then adopt *criteria* – numeric and narrative limits on pollution, sufficient to protect the uses assigned to the waterbody. *Uses + Criteria = Water Quality Standards (WQS).* WQS are regulations adopted by each state to protect the waters under their jurisdiction. If a waterbody is classified for more than one use, the applicable WQS are the criteria that would protect the most sensitive use.

All wastewater dischargers to surface waters must apply for and receive a permit to discharge pollutants under the National Pollutant Discharge Elimination System (NPDES.) Every NPDES permit is required to list every pollutant the discharger anticipates will be released, and establish effluent limits for these pollutants to ensure the discharger will achieve WQS. NPDES permits also delineate relevant control measures, waste management procedures, and monitoring and reporting schedules.

It is during the process of assigning effluent limits in NPDES permits that variances such as mixing zones alter the permit limits for pollutants by multiplying the scientifically derived water quality criteria by dilution factors. The question of whether mixing zones are legal has never been argued in federal court.

Mixing zones are never mentioned or sanctioned in the CWA. To the contrary, the CWA appears to speak against such a notion: "*Whenever…the discharges of pollutants from a point*

source…would interfere with the attainment or maintenance of that water quality…which shall assure protection of public health, public water supplies, agricultural and industrial uses, and the protection and propagation of a balanced population of shellfish, fish and wildlife, and allow recreational activities in and on the water, effluent limitations…shall be established which can reasonably be expected to contribute to the attainment or maintenance of such water quality."

A plain reading of the above paragraph calls for the application of effluent limitations whenever necessary to assure that *WQS will be met in all waters*. Despite the language of the Clean Water Act; US EPA adopted 40 CFR 131.13, General policies, that allows States to, at their discretion, include in their State standards, policies generally affecting their application and implementation, such as mixing zones, low flows and variances. According to EPA; (EPA, Policy and Guidance on Mixing Zones, 63 Fed Reg. 36,788 (July 7, 1998)) as long as mixing zones do not eliminate beneficial uses in the whole waterbody, they do not violate federal regulation or law. California has mixing zone policies included in individual Water Quality Control Plans (Basin Plans) and the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (2005) permitting pollutants to be diluted before being measured for compliance with the state's WQS.

Federal Antidegradation regulations at 40 CFR 131.12 require that states protect waters at their present level of quality and that all beneficial uses remain protected. The corresponding State Antidegradation Policy, Resolution 68-16, requires that any degradation of water quality not unreasonably affect present and anticipated beneficial uses. Resolution 68-16 further requires that: "Any activity which produces or may produce or increase volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with the maximum benefit to the people of the State will be maintained."

• Pollution is defined in the California Water Code as an alteration of water quality to a degree which unreasonably affects beneficial uses. In California, Water Quality Control Plans (Basin Plans) contain water quality standards and objectives which are necessary to protect beneficial uses. The Basin Plan for California's Central Valley Regional Water Board states that: "According to Section 13050 of the California Water Code, Basin Plans consist of a designation or establishment for the waters within a specified area of beneficial uses to be protected, water quality objectives to protect those uses, and a program of implementation needed for achieving the objectives. State law also requires that Basin Plans conform to the policies set forth in the Water Code beginning with Section 13000 and any state policy for water quality control. Since beneficial uses, together with their corresponding water quality objectives, can be defined per federal regulations as water quality standards, the Basin Plans are regulatory references for meeting the state and federal requirements for water quality control (40 CFR 131.20)."

• Nuisance is defined in the California Water Code as anything which is injurious to health, indecent, offensive or an obstruction of the free use of property which affects an entire community and occurs as a result of the treatment or disposal of waste.

The Antidegradation Policy (Resolution 68-16) allows water quality to be lowered as long as beneficial uses are protected (pollution or nuisance will not occur), best practicable treatment and control (BPTC) of the discharge is provided, and the degradation is in the best interest of the people of California. Water quality objectives were developed as the maximum concentration of a pollutant necessary to protect beneficial uses and levels above this concentration would be considered pollution. The Antidegradation Policy does not allow water quality standards and objectives to be exceeded. Mixing zone are regions within public waters adjacent to point source discharges where pollutants are diluted and dispersed at concentrations that routinely exceed water quality standards.

The Antidegradation Policy (Resolution 68-16) requires that best practicable treatment or control (BPTC) of the discharge be provided. Mixing zones have been allowed in lieu of treatment to meet water quality standards at the end-of-the-pipe prior to discharge. To comply with the Antidegradation Policy, the tradeoff of receiving water beneficial uses for lower utility rates must be in the best interest of the people of the state and must also pass the test that the Discharger is providing BPTC. By routinely permitting excessive levels of pollutants to be legally discharged, mixing zones act as an economic disincentive to Dischargers who might otherwise have to design and implement better treatment mechanisms. Although the use of mixing zones may lead to individual, short-term cost savings for the discharger, significant long-term health and economic costs may be placed on the rest of society. An assessment of BPTC, and therefore compliance with the Antidegradation Policy, must assess whether treatment of the wastestream can be accomplished, is feasible, and not simply the additional costs of compliance with water quality standards. A BPTC case can be made for the benefits of prohibiting mixing zones and requiring technologies that provide superior waste treatment and reuse of the wastestream.

EPA's Water Quality Standards Handbook states that: "It is not always necessary to meet all water quality criteria within the discharge pipe to protect the integrity of the waterbody as a whole." The primary mixing area is commonly referred to as the zone of initial dilution, or ZID. Within the ZID acute aquatic life criteria are exceeded. To satisfy the CWA prohibition against the discharge of toxic pollutants in toxic amounts, regulators assume that if the ZID is small, significant numbers of aquatic organisms will not be present in the ZID long enough to encounter acutely toxic conditions. EPA recommends that a ZID not be located in an area populated by non-motile or sessile organisms, which presumably would be unable to leave the primary mixing area in time to avoid serious contamination.

Determining the impacts and risks to an ecosystem from mixing pollutants with receiving waters at levels that exceed WQS is extremely complex. The range of effects pollutants have on different organisms and the influence those organisms have on each other further compromises the ability of regulators to assess or ensure "acceptable" short and long-term impacts from the use of mixing zones. Few if any mixing zones are examined prior to the onset of discharging for the potential effects on impacted biota (as opposed to the physical and chemical fate of pollutants in the water column). Biological modeling is especially challenging – while severely toxic discharges may produce immediately observable effects, long-term impacts to the ecosystem can be far more difficult to ascertain. The effects of a mixing zone can be insidious; impacts to

species diversity and abundance may be impossible to detect until it is too late for reversal or mitigation.

The *CALIFORNIA CONSTITUTION, ARTICLE 10, WATER, SEC. 2* states that: "It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.

The right to water or to the use or flow of water in or from any natural stream or water course in this State is and shall be limited to such water as shall be reasonably required for the beneficial use to be served, and such right does not and shall not extend to the waste or unreasonable use or unreasonable method of use or unreasonable method of diversion of water. Riparian rights in a stream or water course attach to, but to no more than so much of the flow thereof as may be required or used consistently with this section, for the purposes for which such lands are, or may be made adaptable, in view of such reasonable and beneficial uses; provided, however, that nothing herein contained shall be construed as depriving any riparian owner of the reasonable use of water of the stream to which the owner's land is riparian under reasonable methods of diversion and use, or as depriving any appropriator of water to which the appropriator is lawfully entitled. This section shall be self-executing, and the Legislature may also enact laws in the furtherance of the policy in this section contained." The granting of a mixing zone is an unreasonable use of water when proper treatment of the wastestream can be accomplished to meet end-of-pipe limitations. Also contrary to the California Constitution, a mixing zone does not *serve the beneficial use;* to the contrary, beneficial uses are degraded within the mixing zone.

The Central Valley Regional Water Quality Control Board's Basin Plan, page IV-16.00, requires the Regional Board use EPA's *Technical Support Document for Water Quality Based Toxics Control (TSD)* in assessing mixing zones. The TSD, page 70, defines a first stage of mixing, close to the point of discharge, where complete mixing is determined by the momentum and buoyancy of the discharge. The second stage is defined by the TSD where the initial momentum and buoyancy of the discharge are diminished and waste is mixed by ambient turbulence. The TSD goes on to state that in large rivers this second stage mixing may extend for miles. The TSD, Section 4.4, requires that if complete mix does not occur in a short distance mixing zone monitoring and modeling must be undertaken.

The State's *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California* (SIP), Section 1.4.2.2, contains requirements for a mixing zone study which must be analyzed before a mixing zone is allowed for a wastewater discharge. Properly adopted state Policy requirements are not optional. The proposed Effluent Limitations in the proposed Permit are not supported by the scientific investigation that is required by the SIP and the Basin Plan.

SIP Section 1.4.2.2 requires that a mixing zone shall not:

1. Compromise the integrity of the entire waterbody.

2. Cause acutely toxic conditions to aquatic life.
3. Restrict the passage of aquatic life.
4. Adversely impact biologically sensitive habitats.
5. Produce undesirable aquatic life.
6. Result in floating debris.
7. Produce objectionable color, odor, taste or turbidity.
8. Cause objectionable bottom deposits.
9. Cause Nuisance.
10. Dominate the receiving water body or overlap a different mixing zone.
11. Be allowed at or near any drinking water intake.

Federal regulation 40 CFR Section 131.12 (a)(1) the Antidegradation Policy requires that: "Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." The Central Valley Regional Board routinely grants mixing zones above the drinking water maximum contaminant level (MCL) for human health criteria despite that municipal and domestic supply is a designated beneficial use of the receiving stream.

The designated beneficial use of drinking water is not protected within the reach of the stream, which is often established as some unknown length, contrary to 40 CFR 131.12. Few mixing zones are adequately evaluated to determine whether the modeling exercise was in fact relevant or accurate, or monitored over time to assess the impacts of the mixing zone on the aquatic environment. The sampling of receiving waters often consists of analyzing one or two points where the mixing zone boundary is supposed to be – finding no pollution at the mixing zone boundary is often considered proof that mixing has been "successful" when in fact the sampling protocol might have missed the plume altogether.

The proposed Permit allows a mixing zone for constituents based on human heath (Drinking water) rather than requiring treatment to meet end-of-pipe limitations. The Delta serves to convey the drinking water supply for over 25 million Californians via the State Water Project (SWP), Central Valley Project (CVP) and local projects and intakes. Through the SWP and CVP, the channels in the Delta are also used to supply the agricultural water supply for roughly 2 million acres of prime farmland. It is important to stress that the Delta is not the source per se for all SWP and CVP water, but that the Delta and the Sacramento River serve as a critical conduit for water supplies that are physically developed upstream. To comply with the Antidegradation Policy, the trade of receiving water beneficial uses for lower utility rates must be in the best interest of the people of the state and must also pass the test that the Discharger is providing BPTC. Although the use of mixing zones may lead to individual, short-term cost savings for the discharger, significant long-term health and economic costs may be placed on the rest of society. The required antidegradation finding, that allowing a mixing zone rather that requiring treatment to remove pollutants to levels that protect beneficial uses at the point of discharge, is in the best interest of the people of California cannot be made in good faith. It is doubtful that put to a vote that Californians would vote to allow drinking water to be incrementally degraded in favor of maintenance of Sacramento's low sewer rates. Californians have routinely voted for clean water and clean water bonds. An assessment of BPTC, and therefore compliance with the Antidegradation Policy, must assess whether treatment of the wastestream can be accomplished, is feasible, and not simply the additional costs of compliance with water quality standards. A

BPTC case can be made for the benefits of prohibiting a mixing zone and requiring technologies that provide superior waste treatment and reuse of the wastestream. It is more likely that the allowance for a human heath mixing zone may be considered a violation of the State Constitution which requires the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the mixing zone is a waste and unreasonable use of water which is not in the interest of the people and for the public welfare.

The 303(d) listing for the Sacramento-San Joaquin Delta includes: Chlorpyrifos, DDT, Diazinon, Exotic Species, Group A Pesticides, Mercury, Polychlorinated byphenyls (PCBs) and unknown toxicity. The proposed Permit allows for a chronic toxicity mixing zone. Obviously, an allowance for a mixing zone for toxic pollutants will add to the unknown toxicity in the Sacramento River. The Basin Plan states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment*." By definition, an allowance for chronic mixing means that chronic water quality objectives will be exceeded within the mixing zone. An allowance for a chronic mixing zone within the Sacramento River, which is 303(d) listed for unknown toxicity, does not meet the Basin Plan requirements for additional treatment to meet water quality objectives in the limited segment of the river.

The proposed Permit states that: "*Due to the site-specific conditions of the discharge, the Central Valley Water Board has used best professional judgment in determining the appropriate method for conducting the RPA for these non-priority pollutant salinity constituents. For conducting the RPA, the USEPA recommends using a mass-balance approach to determine the expected critical downstream receiving water concentration using a steady-state approach. This downstream receiving water concentration is then compared to the applicable water quality objectives to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion. This approach allows assimilative capacity and dilution to be factored into the RPA.*" The Regional Board's unique approach for determining reasonable potential can only be undertaken if a mixing zone is considered. The Regional Board cites "site-specific conditions" that would warrant such an approach but fails to define any unique conditions here. Basically this is a wastewater discharge into a river – nothing exotic except for the politics. The Regional Board's cited approach for determining reasonable potential is contrary to the regulations. Mixing can only be considered after the reasonable potential has been conducted and an effluent limitation established.

Many pharmaceuticals and personal care products (PPCPs) are commonly found in biosolids and effluents from wastewater treatment plants. Land application of these biosolids and the reclamation of treated wastewater can transfer those PPCPs into the terrestrial and aquatic environments, giving rise to potential accumulation in plants. (Uptake of Pharmaceutical and Personal Care Products by Soybean Plants from Soils Applied with Biosolids and Irrigated with Contaminated Water Chenxiwu, Alison Spongberg, Jason Witter, Minfang and Kevin Czajkowski; *Department of Environmental Sciences, and Department of Geography and Planning, University of Toledo, Toledo, Ohio 43606 Received April 8, 2010. Revised manuscript received June 25, 2010. Accepted July 12, 2010.)* The impacts to irrigated agriculture have not been adequately assessed with regard to the proposed mixing zone.

Water quality criteria for the protection of freshwater aquatic life are generally established on a 1-hour and a 4-day basis for acute and chronic toxic effects, respectively. It is a requirement in the TSD that it be shown that aquatic life does not remain resident within the mixing zone for 1-hour to prevent acute toxicity and 4-days for chronic impacts. There is nothing in the proposed Permit addressing the amount of time and the methods for assessment for aquatic life to migrate through the mixing zone. The primary mixing area is commonly referred to as the zone of initial dilution, or ZID. Within the ZID acute aquatic life criteria are exceeded. To satisfy the CWA prohibition against the discharge of toxic pollutants in toxic amounts, regulators assume that if the ZID is small, significant numbers of aquatic organisms will not be present in the ZID long enough to encounter acutely toxic conditions. EPA recommends that a ZID not be located in an area populated by non-motile or sessile organisms, which presumably would be unable to leave the primary mixing area in time to avoid serious contamination. The proposed Permit does not address populations of non-motile or sessile organisms within the mixing zone. The US Fish and Wildlife Service commented that: "We are also concerned about potential aquatic life attraction impacts from the discharge plume. Various species can be drawn to discharge plumes for various reasons, including feeding and temperature and flow refuge. This attraction can result in impacts from related effluent toxicity and predation. The discharge area's identity as a popular fishing location also suggests an association between the discharge plume and possible predator attraction." The proposed Permit does not show that aquatic life passes through the mixing zone in a time to prevent toxicity; such is required by the TSD, which in turn is required by the Basin Plan.

The SIP requires a mixing zone not restrict the passage of aquatic life. The proposed Permit contains the following statements regarding the accommodations for the passage of fish:
• The chronic aquatic life mixing zone is 400 feet wide and extends 350 feet downstream of the diffuser.
• The Sacramento River is approximately 600 feet wide at the surface. The chronic mixing zone is approximately 400 ft. x 350 ft.
• The size of the zone of passage varies on either side of the river depending on the river geometry.
• The surface of the river is approximately 600 feet across and the bottom of the river is approximately 400 feet across.
• Based on the model the zone of passage at the surface of the river is generally at least 100 feet on both sides of the river, while the zone of passage at the bottom of the river is greater than 40 feet from both sides of the river.

It is stated in the mixing zone analysis discussion in the proposed Permit that the mixing zone is 400 feet across, the same width as the river bottom, with the water surface being 600 feet across. Since the width of the mixing zone is the same as the width of the river bottom, we are to assume that the pollutant stream is not heavier than water and floats somewhere between the bottom and top of the river. In reality, some pollutants are heavier than water and sink while other pollutants are lighter and tend to float. The temperature of the waste will also impact the location of the mixing zone; warmer water tending to be more buoyant. The dye used to confirm that there is a passage for fish would tend to have the same characteristics throughout and tend to stay together. It makes no sense that the mixing zone is 400 feet wide and the river bottom is 400 feet wide and

that there is a zone of passage at the bottom of at least 40 feet unless the plume is always buoyant, there are no pollutants that are heavier than water, such as saline water. The Sacramento River at Freeport is within the designated critical habitat for 5 federally listed fish species including winter- and spring-run Chinook salmon *(Oncorhynchus tshawytscha),* steelhead (0. mykiss), delta smelt *(Hypomesus transpacificus)* and green sturgeon *(Acipenser medirostris)*. The zone of passage for critical habitat is unacceptably small and the proposal for an allowance for a chronic mixing zone should be prohibited.

Tetra Tech was tasked to review the Sacramento Regional County Sanitation District's dynamic modeling study for the Sacramento Regional Wastewater Treatment Plant. Tetra Tech submitted a final review memorandum to the Regional Board dated 30 June 2008. "Some phenomena were observed in the field that were not reproduced in the model, most notably a region of high dye concentration near the eastern river bank just downstream form the diffuser in the October 2005 dye release. The subsequent November 2006 dye release was conducted in an effort to further resolve this observed behavior, however the model failed in all cases to reproduce this high concentration region." (Pages 9 and 10) It was not discussed that the area close to the river banks are defined as providing a bypass for fish – obviously, the dye shows the effluent plume at the bank. This is simply discussed as an anomaly; fish bypass was not addressed. This would confirm that there is no area of bypass for fish. To address the "failed" dye test the Discharger conducted a single additional dye test, following repair of plugged portals in the discharge diffuser. This single test is not sufficient to nullify the results of the dye test, which showed the wastewater discharge hugging the bank of the river (the supposed zone of passage for fish).

In justifying that the mixing zone *shall not cause acutely toxic conditions to aquatic life passing through the mixing zone*, the proposed Permit states that: "The chronic mixing zone does not allow acute aquatic life criteria to be exceed and this Order requires acute bioassays to be conducted using 100% effluent. Compliance with these requirements ensures that acutely toxic conditions to aquatic life passing through the chronic mixing zone do not occur." The bioassays, according to the US Fish and Wildlife Service (15 June 2010) are not using the most sensitive species. The Discharger has routinely failed bioassays without apparent penalty or any requirement for corrective action. Bioassays are also not run continuously. Requiring bioassay sampling is not an assurance that toxic conditions are prohibited or prevented.

Copper and lead act on aquatic organisms in the same fashion. Therefore, additive toxicity for these constituents must be considered. The Basin Plan, at (IV-17.00), states the following: "*Where multiple toxic pollutants exist together in water, the potential for toxicological interactions exists. On a case-by-case basis, the Regional Water Board will evaluate available receiving water and effluent data to determine whether there is reasonable potential for interactive toxicity. Pollutants which are carcinogens or which manifest their toxic effects on the same organ systems or through similar mechanisms will generally be considered to have potentially additive toxicity. The following formula will be used to assist the Regional Water Board in making determinations:*

The concentration of each toxic substance is divided by its toxicologic limit. The resulting ratios are added for substances having similar toxicologic effects and, separately, for carcinogens. If such a sum of ratios is less than one, an additive toxicity problem is assumed not to exist. If the

summation is equal to or greater than one, the combination of chemicals is assumed to present an unacceptable level of toxicological risk. For example, monitoring shows that ground water beneath a site has been degraded by three volatile organic chemicals, A, B, and C, in concentrations of 0.3, 0.4, and 0.04 μg/l, respectively. Toxicologic limits for these chemicals are 0.7, 3, and 0.06 μg/l, respectively. Individually, no chemical exceeds its toxicologic limit. However, an additive toxicity calculation shows: The sum of the ratios is greater than unity (>1.0); therefore the additive toxicity criterion has been violated. The concentrations of chemicals A, B, and C together present a potentially unacceptable level of toxicity."

Additive toxicity has not been considered in the proposed Permit but has the potential to result in the take of endangered species within the mixing zone and potentially beyond.

The City of Rio Vista NPDES permit states that: "The Sacramento River in the vicinity of the discharge is tidally influenced, resulting in flow reversals. With flow reversals, some volume of river water is multiple dosed with the effluent as the river flows downstream past the discharge, reverses moving upstream past the discharge a second time, then again reverses direction and passes the discharge point a third time as it moves down the river. A particular volume of river water may move back and forth, past the discharge point many times due to tidal action, each time receiving an additional load of wastewater." Rio Vista is downstream from the subject wastewater treatment plant. Flow reversals and multi-dosing of pollutants are not discussed in the proposed Permit's mixing zones. The proposed Permit states that: "The SRWTP discharge is considered an incompletely-mixed discharge, so the Discharger conducted a mixing zone study. A mathematical dynamic model was developed by Flow Sciences Inc. and consists of five models linked in series, with the output from previous models used as part of the inputs to subsequent models." The proposed Permit then states that infield verification of the model was conducted; but fails to discuss the verification sampling results or the percentage error. The proposed Permit further states that the model is proprietary and transmittal for verification to the Regional Board was not allowed. Each model would be assessed with an acceptable error. There is no discussion of whether the acceptable errors are additive from each of the models. It has been ten years since this NPDES permit has been renewed which should have allowed for a significant sampling database to be assembled supporting the model, no such discussion is presented in the proposed Permit. We know of no models that are capable of assessing tidal flow reversals in rivers and tidal reversals are not discussed in the proposed Permit. Unfortunately, the proposed Permit fails to provide any information that provides any documentation of the accuracy of the model and the modeled results.

5. **The proposed permit contains an inadequate reasonable potential by using incorrect statistical multipliers as required by Federal regulations, 40 CFR § 122.44(d)(1)(ii).**

For non-priority pollutants, such as salts and aluminum, the permit states that for non-CTR constituents the Regional Board is not restricted to a specific means of conducting a Reasonable Potential analysis (see Aluminum, Permit page F-50). The Regional Board simply compared the effluent sampling results with water quality criteria or standards and did not account for statistical variability and project a Maximum Effluent Concentration (MEC).

Federal regulations, 40 CFR § 122.44(d)(1)(ii), state "when determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, **the variability of the pollutant or pollutant parameter in the effluent**, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water." Emphasis added.

The reasonable potential analysis fails to consider the statistical variability of data and laboratory analyses as explicitly required by the federal regulations. The procedures for computing variability are detailed in Chapter 3, pages 52-55, of USEPA's *Technical Support Document For Water Quality-based Toxics Control.* The State and Regional Boards do not have the authority to override and ignore federal regulation. A statistical analysis results in a projected maximum effluent concentration (MEC) based on laboratory variability and the resulting MEC is greater than was obtained from the actual sampling data. The result of using statistical variability is that a greater number of constituents will have a reasonable potential to exceed water quality standards and therefore a permit will have a greater number of effluent limitations. The intentional act of ignoring the Federal regulation has a clear intent of limiting the number of regulated constituents in an NPDES permit. The failure to utilize statistical variability results in significantly fewer Effluent Limitations that are necessary to protect the beneficial uses of receiving waters.

6. **The proposed Permit fails to utilize valid, reliable, and representative effluent data in conducting a reasonable potential and limits derivation calculations contrary to US EPA's interpretation of Federal Regulations, 40 CFR 122.44(d), and should not be adopted in accordance with 40 CFR 122.4 (a), (d) and (g) and CWC Section 13377.**

The proposed Permit states that: "*The updated information that supports the removal and relaxation of effluent limitations for these constituents includes the following:*
i. ***Aluminum.*** *Effluent monitoring data collected between January 2012 and December 2014 indicates that aluminum in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Secondary MCL or NAWQC acute criterion.*
ii. ***Bis (2-ethylhexyl) phthalate.*** *Effluent monitoring data collected between January 2012 and December 2014 indicates that bis (2-ethylhexyl) phthalate in the discharge cannot meet the performance based effluent limit in Order R5- 2010-0014-04. Assimilative capacity and dilution is available for bis (2-ethylhexyl) phthalate in the receiving water as discussed in section IV.C.3. Therefore, this Order includes less stringent effluent limitations for bis (2- ethylhexyl) phthalate based on the updated monitoring data.*
iii. ***Chlorodibromomethane and Dichlorobromomethane.*** *Order R5-2010-0014-04 established performance-based MDELs for chlorodibromomethane and dichlorobromomethane, because the entire dilution credit was not needed for compliance based on the Discharger pilot plant (Phase I testing) to evaluate biological nutrient removal and disinfection alternatives. However, the Discharger's Phase II pilot study during 2014 showed the maximum concentrations of chlorodibromomethane and dichlorobromomethane would exceed the MDELs in Order R5-2010-0014-04. This Order relaxes the effluent limitations for*

chlorodibromomethane and dichlorobromomethane from Order R5-2010-0114-04. The Phase II pilot testing data submitted by the Discharger is considered new information by the Central Valley Water Board which justifies the application of less stringent effluent limitations.
iv. ***Copper.*** *Previous Order R5-2010-0114-04 included effluent limitations for copper without the allowance for dilution, because based on Facility performance end-of-pipe effluent limits could be met. The Discharger has provided updated information indicating that effluent concentrations of copper are increasing due to recent drought conditions and water conservation efforts and requested dilution for copper. This Order allows a chronic mixing zone for copper resulting in less stringent effluent limitations for copper, which are based on updated dynamic modeling results and effluent characteristics.*
v. ***Cyanide.*** *The Discharger provided updated dynamic modeling results in a 14 August 2014 Mixing Zone Request (Larry Walker Associates) that reflected effluent data collected between January 2012 and December 2014 and an expanded historical ambient dataset to include data from 2005 to 2014.This Order includes less stringent effluent limitations for cyanide based on the updated dynamic modeling results.*
vi. ***Dibenzo(a,h)anthracene.*** *Effluent and receiving water monitoring data collected between January 2012 and December 2014 for dibenzo(a,h)anthracene indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR human health criteria.*
vii. ***Electrical Conductivity.*** *Updated effluent data collected between January 2012 and December 2014 indicates that effluent concentrations of electrical conductivity are increasing due to recent drought conditions and water conservation efforts. Although the concentrations are increasing, as shown in section IV.C.3.a.x of this Fact Sheet, the mass loading of salinity is not increasing.*
viii. ***Manganese.*** *Effluent and receiving water monitoring data collected between January 2012 and December 2014for manganese indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Secondary MCL.*
ix. ***Methyl Tertiary Butyl Ether.*** *Effluent monitoring data collected between January 2012 and December 2014 indicates that methyl tertiary butyl ether in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Secondary MCL.*
x. ***Pentachlorophenol.*** *Effluent and receiving water monitoring data collected between January 2012 and December 2014 for pentachlorophenol indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR human health criteria.*
xi. ***Tetrachloroethylene.*** *Effluent and receiving water monitoring data collected between January 2012 and December 2014 for tetrachloroethylene indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR human health criteria. Thus, removal of the effluent limitations for aluminum, dibenzo(a,h)anthracene, manganese, methyl tertiary butyl ether, pentachlorophenol, and tetrachloroethylene or relaxation of the effluent limitations for copper, cyanide, and electrical conductivity from Order R5-2010-0114-04 is in accordance with CWA section 402(o)(2)(B)(i), which allows for the relaxation of effluent limitations based on new information that was not available at the time of permit issuance.*"

The proposed Permit utilized data from January 2012 through December 2014 to conduct the Reasonable Potential Analysis to determine the necessity of Effluent Limitations. This resulted in the elimination of numerous Effluent Limitations from the proposed Permit or relaxation of

others. The discharger failed to use the data from the last permit and any and all other relevant and reliable data. There is no presentation of why any of the discarded data would be invalid. There have been no documented major changes to the treatment system or the character of the wastestream that would account for any data being discredited.

Federal Regulations, 40 CFR 122.44(d), requires that limits must be included in permits where pollutants will cause, have reasonable potential to cause, or contribute to an exceedance of the State's water quality standards. US EPA has interpreted 40 CFR 122.44(d) in *Central Tenets of the National Pollutant Discharge Elimination System (NPDES) Permitting Program* (Factsheets and Outreach Materials, 08/16/2002) that; although States will likely have unique implementation policies there are certain tenets that may not be waived by State procedures. These tenets include that "where valid, reliable, and representative effluent data or instream background data are available they MUST be used in applicable reasonable potential and limits derivation calculations. Data may not be arbitrarily discarded or ignored." The Regional Board has failed to use valid, reliable and representative data in developing limitations, contrary to the cited Federal Regulation.

The *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP), Section 1.2 requires that: "When implementing the provisions of this Policy, the RWQCB shall use all available, valid, relevant, representative data and information, as determined by the RWQCB. The RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy. Instances where such consideration is warranted include, but are not limited to, the following: evidence that a sample has been erroneously reported or is not representative of effluent or ambient receiving water quality; questionable quality control/quality assurance practices; and varying seasonal conditions." The Regional Board has presented no information that would justify discarding, at a minimum, the data from the last permit development period.

Statistical procedures are valid tools for assessing trends and analyzing data. It must be recognized however that statistical procedures are not scientific laws. In wastewater engineering it is commonplace for individual data points to be peaks or depressions far from the statistical norm. This is could be attributed to slug load discharges, discharge practices from local industries, or simply the infrequency of sampling wastewater effluents. Wastewater effluent is generally not sampled continuously. It must also be recognized that wastewater treatment personnel tend to perform their daily functions as a matter of routine, such as sampling the effluent at the same time every day. The likely hood of data peaks being "real" absent erroneously reporting, questionable quality control/quality assurance practices or varying seasonal or daily conditions is more defensible than the data being an "outlier", hence the EPA and SIP requirement that data may not be arbitrarily discarded or ignored.

Federal Regulation, 40 CFR 122.4 (a), (d) and (g) require that no permit may be issued when the conditions of the permit do not provide for compliance with the applicable requirements of the CWA, or regulations promulgated under the CWA, when imposition of conditions cannot ensure compliance with applicable water quality requirements and for any discharge inconsistent with a plan or plan amendment approved under Section 208(b) of the CWA. In accordance with 40

CFR 122.4 (a), (d) and (g) the proposed Permit may not be adopted for failing to include protective limitations based on valid, reliable and representative data.

California Water Code, section 13377, requires that: "Notwithstanding any other provision of this division, the state board and the regional boards shall, as required or authorized by the Federal Water Pollution Control Act, as amended, issue waste discharge and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance."

7. The proposed Permit contains Effluent Limitations less stringent than the existing permit contrary to the Antibacksliding requirements of the Clean Water Act and Federal Regulations, 40 CFR 122.44 (l)(1).

The proposed Permit provides for an increase in the volume and mass of pollutants discharged for copper, cyanide, chlorodibromomethane, dichlorobromomethane and electrical conductivity and removes effluent limitations for aluminum, dibenzo(a,h)anthracene, manganese, methyl tertiary butyl ether, pentachlorophenol, and tetrachloroethylene. The Order relaxes the effluent limitations for copper, cyanide, and bis (2-ethylhexyl) Phthalate based on allowance of mixing zones. The proposed Permit, page F-91, states that: "*The effluent limitations in this Order are at least as stringent as the effluent limitations in Order R5-2010-0114-04, with the exception of effluent limitations for aluminum, bis (2-ethylhexyl) phthalate, chlorodibromomethane, copper, cyanide, dibenzo(a,h)anthracene, dichlorobromomethane, electrical conductivity, manganese, methyl tertiary butyl ether, pentachlorophenol, and tetrachloroethylene.*"

The proposed Permit utilized data from January 2012 through December 2014 to conduct the Reasonable Potential Analysis to determine the necessity of Effluent Limitations. This resulted in the elimination of numerous Effluent Limitations from the proposed Permit or relaxation of others. The discharger failed to use the data from the last permit and any and all other relevant and reliable data. There is no presentation of why any of the discarded data would be invalid. There have been no documented major changes to the treatment system or the character of the wastestream that would account for any data being discredited.

Under the Clean Water Act (CWA), point source dischargers are required to obtain federal discharge (NPDES) permits and to comply with water quality based effluent limits (WQBELs) in NPDES permits sufficient to make progress toward the achievement of water quality standards or goals. The antibacksliding and antidegradation rules clearly spell out the interest of Congress in achieving the CWA's goal of continued progress toward eliminating all pollutant discharges. Congress clearly chose an overriding environmental interest in clean water through discharge reduction, imposition of technological controls, and adoption of a rule against relaxation of limitations once they are established.

Upon permit reissuance, modification, or renewal, a discharger may seek a relaxation of permit limitations. However, according to the CWA, relaxation of a WQBEL is permissible only if the requirements of the antibacksliding rule are met. The antibacksliding regulations prohibit EPA

from reissuing NPDES permits containing interim effluent limitations, standards or conditions less stringent than the final limits contained in the previous permit, with limited exceptions. These regulations also prohibit, with some exceptions, the reissuance of permits originally based on best professional judgment (BPJ) to incorporate the effluent guidelines promulgated under CWA §304(b), which would result in limits less stringent than those in the previous BPJ-based permit. Congress statutorily ratified the general prohibition against backsliding by enacting §§402(o) and 303(d)(4) under the 1987 Amendments to the CWA. The amendments preserve present pollution control levels achieved by dischargers by prohibiting the adoption of less stringent effluent limitations than those already contained in their discharge permits, except in certain narrowly defined circumstances.

When attempting to backslide from WQBELs under either the antidegradation rule or an exception to the antibacksliding rule, relaxed permit limits must not result in a violation of applicable water quality standards. The general prohibition against backsliding found in §402(o)(1) of the Act contains several exceptions. Specifically, under §402(o)(2), a permit may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant *if*: (A) material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation; (B)(i) information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or (ii) the Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under subsection (a)(1)(B) of this section; (C) a less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy [(e.g., Acts of God)]; (D) the permittee has received a permit modification under section 1311(c), 1311(g), 1311(h), 1311(i), 1311(k), 1311(n), or 1326(a) of this title; or (E) the permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit, and has properly operated and maintained the facilities, but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

Even if a discharger can meet either the requirements of the antidegradation rule under §303(d)(4) or one of the statutory exceptions listed in §402(o)(2), there are still limitations as to how far a permit may be allowed to backslide. Section 402(o)(3) acts as a floor to restrict the extent to which BPJ and water quality-based permit limitations may be relaxed under the antibacksliding rule. Under this subsection, even if EPA allows a permit to backslide from its previous permit requirements, EPA may never allow the reissued permit to contain effluent limitations which are less stringent than the current effluent limitation guidelines for that pollutant, or which would cause the receiving waters to violate the applicable state water quality standard adopted under the authority of §303.49.

Federal regulations 40 CFR 122.44 (l)(1) have been adopted to implement the antibacksliding requirements of the CWA:

> (l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under Sec. 122.62.)
>
> (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.
>
> (i) Exceptions--A permit with respect to which paragraph (l)(2) of this section applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant, if:
> (A) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation;
> (B)(1) Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or (2) The Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b);
> (C) A less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy;
> (D) The permittee has received a permit modification under section 301(c), 301(g), 301(h), 301(i), 301(k), 301(n), or 316(a); or (E) The permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification). (ii) Limitations. In no event may a permit with respect to which paragraph (l)(2) of this section applies be renewed, reissued, or modified to contain an effluent limitation which is less stringent than required by effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may such a permit to discharge into waters be renewed, issued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard under section 303 applicable to such waters.

The Regional Board has failed to present any reasonable explanation for the removal of Effluent Limitations from the proposed Permit other than the fact that they failed to use relevant and reliable data and instead used a truncated data set to conduct the Reasonable Potential Analysis.

8. The proposed Permit fails to include an Effluent Limitation for Iron which is improperly justified by discarding relevant and reliable data, contrary to 40 CFR 122.44 (l)(1) and 40 CFR 122.44(d).

The Effluent Limitation for Iron has been eliminated as the Regional Board has discarded an elevated data point of 950 ug/l. The only rational presented by the Regional Board is that the high data point is not in a straight line with the other data points for iron. There is no submittal of any laboratory QA/QC from an accredited laboratory that the data point is questionable. Anyone with experience with sewage discharges recognizes that peak concentrations are a normal event not an abnormality.

Statistical procedures are valid tools for assessing trends and analyzing data. It must be recognized however that statistical procedures are not scientific laws. In wastewater engineering it is commonplace for individual data points to be peaks or depressions far from the statistical norm. This is could be attributed to slug load discharges, discharge practices from local industries, or simply the infrequency of sampling wastewater effluents. Wastewater effluent is generally not sampled continuously. It must also be recognized that wastewater treatment personnel tend to perform their daily functions as a matter of routine, such as sampling the effluent at the same time every day. The likely hood of data peaks being "real" absent erroneously reporting, questionable quality control/quality assurance practices or varying seasonal or daily conditions is more defensible than the data being an "outlier", hence the EPA and SIP requirement that data may not be arbitrarily discarded or ignored.

9. The proposed Permit does not contain Effluent Limitations for chronic toxicity and therefore does not comply with Federal regulations, at 40 CFR 122.44 (d)(1)(i) and the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP).

Domestic wastewater treatment plants, by their nature, contain numerous toxic constituents and present a reasonable potential to exceed the Basin Plan's narrative Toxicity water quality objective. Evan a well maintained and operated wastewater treatment plant can experience upsets and bypass resulting in toxic discharges. Infrequent, monthly or quarterly, toxicity testing is not sufficient to state that a domestic wastewater treatment plant has not discharged toxic constituents in toxic concentrations during a five year life of an NPDES permit.

The SIP, Section 4, Toxicity Control Provisions, Water Quality-Based Toxicity Control, states that: "A chronic toxicity effluent limitation is required in permits for all dischargers that will cause, have a reasonable potential to cause, or contribute to chronic toxicity in receiving waters." The SIP is a state *Policy* and CWC Sections 13146 and 13247 require that the Board in carrying out activities which affect water quality shall comply with state policy for water quality control unless otherwise directed by statute, in which case they shall indicate to the State Board in writing their authority for not complying with such policy.

Federal regulations, at 40 CFR 122.44 (d)(1)(i), require that limitations must control all pollutants or pollutant parameters which the Director determines are or may be discharged at a level which will cause, or contribute to an excursion above any State water quality standard,

including state narrative criteria for water quality. There has been no argument that domestic sewage contains toxic substances and presents a reasonable potential to cause toxicity if not properly treated and discharged. The Water Quality Control Plan for the Sacramento/ San Joaquin River Basins (Basin Plan), Water Quality Objectives (Page III-8.00) for Toxicity is a narrative criteria which states that all waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. The Proposed Permit states that: "…to ensure compliance with the Basin Plan's narrative toxicity objective, the discharger is required to conduct whole effluent toxicity testing…". However, sampling does not equate with or ensure compliance. The Tentative Permit requires the Discharger to conduct an investigation of the possible sources of toxicity if a threshold is exceeded. This language is not a limitation and essentially eviscerates the Regional Board's authority, and the authority granted to third parties under the Clean Water Act, to find the Discharger in violation for discharging chronically toxic constituents. An effluent limitation for chronic toxicity must be included in the Order. In addition, the Chronic Toxicity Testing Dilution Series should bracket the actual dilution at the time of discharge, not use default values that are not relevant to the discharge.

Proposed Permit is quite simply wrong; by failing to include effluent limitations prohibiting chronic toxicity the proposed Permit does not "…implement the SIP". The Regional Board has commented time and again that no chronic toxicity effluent limitations are being included in NPDES permit until the State Board adopts a numeric limitation. The Regional Board explanation does not excuse the proposed Permit's failure to comply with Federal Regulations, the SIP, the Basin Plan and the CWC. The Regional Board's Basin Plan, as cited above, already states that: "…waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses…" Accordingly, the proposed Permit must be revised to prohibit chronic toxicity (mortality and adverse sublethal impacts to aquatic life, (sublethal toxic impacts are clearly defined in EPA's toxicity guidance manuals)) in accordance with Federal regulations, at 40 CFR 122.44 (d)(1)(i) and the Basin Plan and the SIP.

10. The proposed Permit contains an inadequate antidegradation analysis that does not comply with the requirements of Section 101(a) of the Clean Water Act, Federal Regulations 40 CFR § 131.12, the State Board's Antidegradation Policy (Resolution 68-16) and California Water Code (CWC) Sections 13146 and 13247.

The proposed Permit provides for an increase in the volume and mass of pollutants discharged for copper, cyanide, chlorodibromomethane, dichlorobromomethane and electrical conductivity and removes effluent limitations for aluminum, dibenzo(a,h)anthracene, manganese, methyl tertiary butyl ether, pentachlorophenol, and tetrachloroethylene. The Order relaxes the effluent limitations for copper, cyanide, and bis (2-ethylhexyl) Phthalate based on allowance of mixing zones. Yet, the proposed Permit states, page F-94, that an Antidegradation Policy analysis was only conducted for chlorodibromomethane and dichlorobromomethane.

CWC Sections 13146 and 13247 require that the Board in carrying out activities which affect water quality shall comply with state policy for water quality control unless otherwise directed by statute, in which case they shall indicate to the State Board in writing their authority for not complying with such policy. The State Board has adopted the Antidegradation Policy

(Resolution 68-16), which the Regional Board has incorporated into its Basin Plan. The Regional Board is required by the CWC to comply with the Antidegradation Policy.

Section 101(a) of the Clean Water Act (CWA), the basis for the antidegradation policy, states that the objective of the Act is to "restore and maintain the chemical, biological and physical integrity of the nation's waters." Section 303(d)(4) of the CWA carries this further, referring explicitly to the need for states to satisfy the antidegradation regulations at 40 CFR § 131.12 before taking action to lower water quality. These regulations (40 CFR § 131.12(a)) describe the federal antidegradation policy and dictate that states must adopt both a policy at least as stringent as the federal policy as well as implementing procedures.

California's antidegradation policy is composed of both the federal antidegradation policy and the State Board's Resolution 68-16 (State Water Resources Control Board, Water Quality Order 86-17, p. 20 (1986) ("Order 86-17); Memorandum from Chief Counsel William Attwater, SWRCB to Regional Board Executive Officers, "federal Antidegradation Policy," pp. 2, 18 (Oct. 7, 1987) ("State Antidegradation Guidance")). As a state policy, with inclusion in the Water Quality Control Plan (Basin Plan), the antidegradation policy is binding on all of the Regional Boards (Water Quality Order 86-17, pp. 17-18).

Implementation of the state's antidegradation policy is guided by the State Antidegradation Guidance, SWRCB Administrative Procedures Update 90-004, 2 July 1990 ("APU 90-004") and USEPA Region IX, "Guidance on Implementing the Antidegradation Provisions of 40 CFR 131.12" (3 June 1987) (" Region IX Guidance"), as well as Water Quality Order 86-17.

The Regional Board must apply the antidegradation policy whenever it takes an action that will lower water quality (State Antidegradation Guidance, pp. 3, 5, 18, and Region IX Guidance, p. 1). Application of the policy does not depend on whether the action will actually impair beneficial uses (State Antidegradation Guidance, p. 6). Actions that trigger use of the antidegradation policy include issuance, re-issuance, and modification of NPDES and Section 404 permits and waste discharge requirements, waiver of waste discharge requirements, issuance of variances, relocation of discharges, issuance of cleanup and abatement orders, increases in discharges due to industrial production and/or municipal growth and/other sources, exceptions from otherwise applicable water quality objectives, etc. (State Antidegradation Guidance, pp. 7-10, Region IX Guidance, pp. 2-3). Both the state and federal policies apply to point and nonpoint source pollution (State Antidegradation Guidance p. 6, Region IX Guidance, p. 4).

Even a minimal antidegradation analysis would require an examination of: 1) existing applicable water quality standards; 2) ambient conditions in receiving waters compared to standards; 3) incremental changes in constituent loading, both concentration and mass; 4) treatability; 5) best practicable treatment and control (BPTC); 6) comparison of the proposed increased loadings relative to other sources; 7) an assessment of the significance of changes in ambient water quality and 8) whether the waterbody was a ONRW. A minimal antidegradation analysis must also analyze whether: 1) such degradation is consistent with the maximum benefit to the people of the state; 2) the activity is necessary to accommodate important economic or social development in the area; 3) the highest statutory and regulatory requirements and best management practices for pollution control are achieved; and 4) resulting water quality is

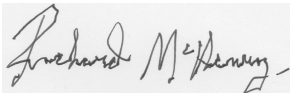
adequate to protect and maintain existing beneficial uses. A BPTC technology analysis must be done on an individual constituent basis; while tertiary treatment may provide BPTC for pathogens, dissolved metals may simply pass through.

Any antidegradation analysis must comport with implementation requirements in State Board Water Quality Order 86-17, State Antidegradation Guidance, APU 90-004 and Region IX Guidance. The conclusory, unsupported, undocumented statements in the Permit are no substitute for a defensible antidegradation analysis.

Thank you for considering these comments. If you have questions or require clarification, please don't hesitate to contact us.

Sincerely,

Bill Jennings, Executive Director
California Sportfishing Protection Alliance



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